

# Excalibur 155mm Precision-Guided Extended Range Artillery Projectile Family



Flight Test



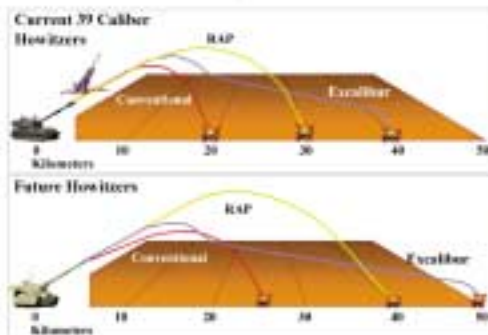
Excalibur Family of Precision Guided Artillery Projectiles



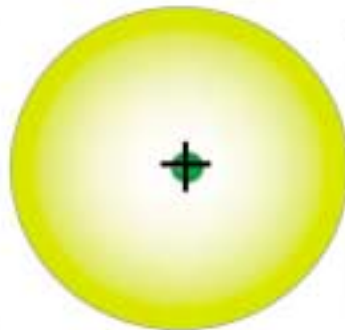
Current Configuration



Concept of Operations

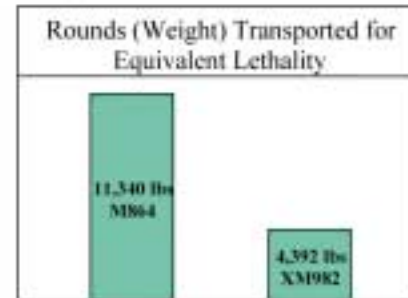


Range Improvements



Accuracy

- Current Artillery Projectiles--up to 370m dispersion
- Excalibur--constant 10m dispersion
- Target Grid



Effectiveness / Lethality



YPG Projectile Test Firings



Guidance Electronics Gun Hardening Tests

## MISSION

Provide the maneuver force with improved fire support through a precision-guided, extended-range, accuracy-enhancing, collateral damage reducing, more-lethal family of 155mm artillery projectiles.

## DESCRIPTION AND SPECIFICATIONS

The Excalibur, XM982, is a family of precision, 155mm modular projectiles that incorporate three unique payloads. The Dual Purpose Improved Conventional Munitions (DPICM) variant is used against personnel, materiel, light armored targets, and other area targets. A Sensor Fuzed Munition (SFM) variant will be used to engage self-propelled artillery and armored targets. The Unitary Warhead will be used against various personnel, equipment, and building targets in urban or complex terrain. Excalibur permits our 155mm artillery systems to regain range overmatch while precisely engaging targets up to 50km. Excalibur is a force multiplier that increases lethality while reducing the logistical burden for legacy, interim and objective forces.

An internal Global Positioning System (GPS) updates the inertial navigation system, providing precision guidance and improved accuracy. Excalibur is effective in all weather and terrain. It contains a fuzing system that is inductively set by either an enhanced portable inductive artillery fuze setter or Crusader's inductive automated fuze setter. The target, platform location, and GPS-specific data are inductively entered into the projectile's mission computer, located in the nose of the projectile.

Upon firing, Excalibur will determine its up-reference using inertial sensors. A trajectory correction to optimize range and time of arrival takes place mid-way between apogee and the target. Upon arrival, the trajectory is optimized for the DPICM, SFM or Unitary payload variants.

**Caliber:** 155mm

**Weight:** 106 lb

**Max range:** 40 km (from M109A6 and XM777 digital howitzers), 50 km (from Crusader)

**Number of submunitions:** 64 DPICMs/rd, or 2 SFMs/rd, or 1 Unitary/rd

## FOREIGN COUNTERPART

Congress directed the U.S. Marine Corps in FY99 to pursue an international cooperative program with the Government of Sweden to explore a Trajectory Correctable Munition (TCM) concept proposed by BOFORS and their U.S. partner, Science and Applied Technologies, Inc. A number of other European countries expressed interest in joining the Excalibur or TCM efforts.

## FOREIGN MILITARY SALES

None

## PROGRAM STATUS

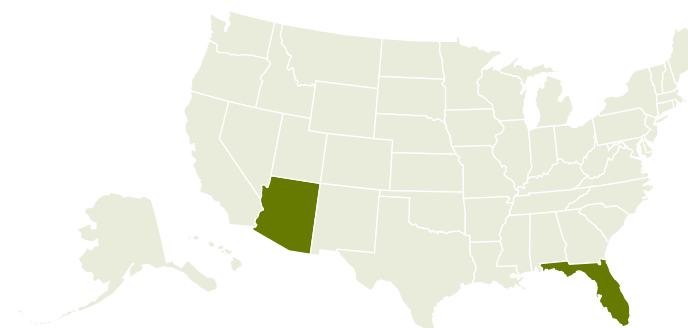
- **January 23, 1998** Award contract for DPICM engineering and manufacturing development (EMD).
- **Current** Continue EMD.

## PROJECTED ACTIVITIES

- **2QFY03** Conclude development testing.
- **2QFY04** Commence low-rate initial production.
- **1QFY06** Achieve milestone III.
- **3QFY06** Commence full-rate production.
- **4QFY06** Achieve initial operational capability.

## PRIME CONTRACTORS

Raytheon (Tucson, AZ); Primex Technologies (St. Petersburg, FL)



\* See appendix for list of subcontractors

